S. N o	Course	Course Outcomes
		I Year /I Sem
		Advanced Pharmacology – I
	Core Course I Advanced Pharmacology – I	CO1: Students will be able to discuss the pathophysiology and pharmacotherapy of certain diseases. CO2: Students will be able to explain the mechanism of drug actions at cellular and molecular level. CO3: Students will be able to understand the adverse effects of drugs used in treatment of diseases. CO4: Students will be able to understand the contraindications and clinical uses of drugs used in treatment of diseases.
	Core Course II Clinical Pharmacology and Pharmacotherapeutics	**Clinical Pharmacology and Pharmacotherapeutics** CO1: Students will be able to understand the pathophysiology of selected disease states and the rationale for drug therapy. CO2: Students will be able to understand the controversies in drug therapy. CO3: Students will be able to know the importance of preparation of individualized therapeutic plans based on diagnosis. CO4: Students will be able to know the needs to identify the patient-specific parameters relevant in initiating drug therapy, and monitoring therapy. CO5: Students will be able to summarize the therapeutic approach to management of these diseases including reference to the latest available evidence. CO6: Students will be able to understand pathophysiology and applied pharmacotherapeutics of diseases.
3 .	Core Course III Pharmacokinetics And Drug Metabolism	**Pharmacokinetics And Drug Metabolism** CO1: Students will be able to understand various pharmacokinetic parameters. CO2: Students will be able to understand influence of these parameters on efficacy of drugs. CO3: Students will be able to identify and resolve drug related problems. CO4: Students will be able to know or to do pharmacogenetics.
4 .	Core Elective I	**Principles of Drug Discovery** CO1: - Students will be able to Explain the various stages of drug discovery. CO2: - Students will be able to Appreciate the importance of the role of genomics, Proteomics and bioinformatics in drug discovery. CO3: - Students will be able to Explain Various Stages for drug discovery
5	Core Elective I 2. Clinical Research and Pharmacovigilance	**Clinical Research and Pharmacovigilance** CO1: Student will be able to explain the regulatory requirements for conducting clinical trial CO2: Student will be able to demonstrate the types of clinical trial designs. CO3: Student will be able to explain the responsibilities of key players involved in clinical trials. CO4: Student should able to execute safety monitoring, reporting and close-out

			activities.
			CO5: Student should able explain the principles of Pharmacovigilance.
			CO6: Student should able to detect new adverse drug reactions and their assessment.
			CO7: Student should able to perform the adverse drug reaction reporting systems and communication in pharmacovigilance
		Animal Cell Cultures and applications	
6	Animal Cell Cultures and applications		CO1: Student will be able to Explain the various types of cell cultures, their requirements and advantage.
			CO2: Student will be able to Explain various IVF techniques, embryo cultures and gene transfer.
			CO3: - Student will be able to appreciate the importance of the role of embryo culture in and its applications.
			CO4: Student will be able to Explain the bioreactor, Cell lines and their app
		Molecular Biology	
7			CO1: Student will be able Explain the various structure and chemistry of DNA, RNA etc.
			CO2: Student will be able to Explain topology of DNA, Organization of DNA in chrosomes
			CO3: - Student will be able to appreciate the importance and mechanism
		Principles of Toxicology	
8			CO1: Students will be able to explain about the various types of toxicity studies.
			CO2: Students will be able to understand the importance of ethical and regulatory requirements for toxicity studies.
			CO3: Students will be able to demonstrate the practical skills required to conduct the preclinical toxicity studies.
10.	Laboratory I Advanced Pharmacology-I (Lab)		**Advanced Pharmacology- I (Lab)**
			CO1: Students will be able to evaluate the pathophysiology and pharmacotherapy of certain diseases.
			CO2: Students will be able to find the mechanism of drug actions at cellular and molecular level.
			CO3: Students will be able to determine the adverse effects of drugs used in treatment of diseases.
			CO4: Students will be able to estimate the contraindications and clinical uses of drugs used in treatment of diseases.
11		**Clinical Pharmacology and Pharmacotherapeutics (Lab)**	

.		CO1: Students will be able to evaluate the pathophysiology of selected disease states and the rationale for drug therapy. CO2: Students will be able to find out the controversies in drug therapy. CO3: Students will be able to know the preparation of individualized therapeutic plans based on diagnosis. CO4: Students will be able to know the needs to identify the patient-specific parameters relevant in initiating drug therapy, and monitoring therapy CO5: Students will be able to summarize the therapeutic approach to management of these diseases including reference to the latest available evidence.
		I YEAR II SEM
12.	Core Course IV Advanced Pharmacology- II	**Advanced Pharmacology- II**
		CO1: Students will be able to explain the mechanism of drug actions at cellular and molecular level. CO2: Students will be able to discuss the pathophysiology and pharmacotherapy of certain diseases. CO3: Students will be able to understand the adverse effects of drugs used in treatment of diseases. CO4: Students will be able to understand the contraindications and clinical uses of drugs used in treatment of diseases.
13.	Core Course V Pharmacological and Toxicological Screening Methods	**Pharmacological Screening Methods and Toxicology**
		CO1. Students will be able to know about the regulations and ethical requirement for the usage of experimental animals. CO2. Students will be able to know about the various animals used in the drug discovery process and good laboratory practices in maintenance and handling of experimental animals. CO3. Students will be able to know about the various newer screening methods involved in the drug discovery process. CO3. Students will be able to correlate the preclinical data to humans.
		Quality Use of Medicines
14.	Core Elective II 1. Quality Use of Medicines	CO1: Students will be able to understand the principles of quality use of medicines CO2: Students will be able to know the benefits and risks associated with use of medicines. CO3: Students will be able to understand regulatory aspects of quality use of medicines CO4: Students will be able to identify and resolve medication related problems. CO5: Students will be able to know about the quality use of medicines. CO6: Students will be able to do practice of evidence-based medicine.
		Pharmacoepidemiology and Pharmacoeconomics

15	Pharmacoepidemiology and Pharmacoeconomics	CO1: Students will be able understand the various epidemiological methods and their applications. CO2: Students will be able to understand the fundamental principles of Pharmacoeconomics. CO3: Students will be able to identify and determine relevant cost and consequences associated with pharmacy products and services. CO4: Students will be able to perform the key Pharmacoeconomics analysis methods. CO5: Students will be able to understand the pharmacoeconomic decision analysis methods and its applications. CO6: Students will be able to describe current pharmacoeconomic methods and issues. CO7: Students will be able to understand the applications of Pharmacoeconomics to various pharmacy settings
		Advanced Drug Delivery Systems
16	Advanced Drug Delivery Systems	CO1: Students will be able to Know the fabrication, design, evaluation and application of drug delivery systems. CO2: Students will be able to apply the knowledge of fabrication, design, evaluation and application of drug delivery systems
		PHARMACEUTICAL MANAGEMENT
17.		CO1: Students will be able to know how to manage a pharma industry and its various departments Viz QA, QC, Production etc. CO2: - Students will be able to know along with this it aids the students to develop leadership qualities, communication and interpersonal skills, decisions making, motivation, organization and various managerial functions and professional skills required for a dynamic professional. CO3:- Students will be able to helps to understand the concept of managerial control ,its levels and role ,importance in pharma industry.
		NUTRACEUTICALS
18.	NUTRACEUTICALS	CO1: Students will be able to understand the importance of Nutraceuticals in various common problems with the concept of free radicals. CO1: Students will be able to evaluate the importance of Nutraceuticals in various common problems with the concept of free radicals.
		PHARMACOKINETICS AND THERAPEUTIC DRUG MONITORING

19.	PHARMACOKINETICS AND THERAPEUTIC DRUG MONITORING	CO1: Students will be able to the design the drug dosage regimen for individual Patients. CO2: Students will be able to interpret and correlate the plasma dug concentrations with patients' therapeutic outcomes. CO3: Students will be able to manage TDM of selected drugs CO4: Students will be able to Apply Pharmacokinetic parameters in analytical determination.
20.	Laboratory III Advanced Pharmacology –II (Lab)	**Advanced Pharmacology –II (Lab)** CO1: Students will be able to identify the mechanism of drug actions at cellular and molecular level. CO2: Students will be able to evaluate the pathophysiology and pharmacotherapy of certain diseases. CO3: Students will be able to find out the adverse effects of drugs used in treatment of diseases CO4: Students will be able to determine the contraindications and clinical uses of drugs used in treatment of diseases.
22.	Laboratory IV Advanced Screening Methods and Toxicology (Lab)	**Pharmacological Screening Methods and Toxicology (Lab)** CO1: Students will be known to the regulations and ethical requirement for the usage of experimental animals. CO2: Students will be able to know the use and selection of various animals used in the drug discovery process and good laboratory practices in maintenance and handling of experimental animals. CO3: Students will be able to evaluate various screening methods involved in the drug discovery process. CO4: Students will be able to correlate the preclinical data to humans.
		BIOSTATISTICS
23	BIOSTATISTICS	CO1: -The student will be known the Biostatistics arrangement, presentation and formation of tables and charts. CO2: - The student will be able to know the correlation and regression & application of different methods, analysis of data.
		HOSPITAL AND COMMUNITY PHARMACY
24	HOSPITAL AND COMMUNITY PHARMACY	CO1: - Students Will be able to Understand the organizational structure of hospital pharmacy CO2: - Students Will be able to Understand drug policy and drug committees CO3: - Students Will be able to Know about procurement & drug distribution practices CO4: - Students Will be able to Know the admixtures of radiopharmaceuticals
		MEDICINAL PLANT BIOTECHNOLOGY

25		
	MEDICINAL PLANT BIOTECHNOLOGY	**CO1: - Students** will be able to know about various strategies of plant tissue culture and students will gain knowledge about various secondary metabolites produced by plant tissue culture.